



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/698,126

10/31/2003

Arup Acharya

590.116

8951

35195 7590 11/09/2009
FERENCE & ASSOCIATES LLC
409 BROAD STREET
PITTSBURGH, PA 15143

EXAMINER

SIKRI, ANISH

ART UNIT

PAPER NUMBER

2443

MAIL DATE

DELIVERY MODE

11/09/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/698,126	Applicant(s) ACHARYA ET AL.	
	Examiner ANISH SIKRI	Art Unit 2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 19 and 21-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 10-18, 20 are cancelled

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims **1-9, 19, 21-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Myers et al (US Pub 2003/0079005) hereafter known as Myers, in view of Kawakami (US Pub 2001/0044842), and in view of Anerousis et al (US Pub 2004/0210670) hereafter known as Anerousis.

2. Consider **Claim 1**, Myers discloses the method comprising the steps of: establishing and arrangement for linking said computer to least a first and second internet service providers (ISP) (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network); and to direct the packet to an outgoing link to one of the first ISP and the second ISP (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network),

Art Unit: 2443

measuring relevant performance metrics (Myers, [0098], Myers discloses on how performance and metrics are measured by the nodes).

3. But Myer does not explicitly disclose the use of multi-homed network connected general purpose computer and utilizing the multi-homed network-connected general purpose computer for performing network route control function, said control functions comprising making a routing control decision at said computer prior to sending packet comprising network traffic and wherein the multi-homed network-connected general purpose computer is configured to perform the control functions without external network appliances and without a dedicated route control device

4. Nonetheless, Kawakami discloses a connection between a multi-homed network connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network). And utilizing the multi-homed network-connected general purpose computer for performing network route control function, said control functions comprising making a routing control decision at said computer prior to sending packet comprising network traffic (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) and wherein the multi-homed network-connected general purpose computer is configured to perform the control functions without external network appliances and without a dedicated route control device (Kawakami, Fig 1, Fig 2, Kawakami discloses in [0055]-[0057], that the edge nodes can perform routing).

Art Unit: 2443

5. Both Myers and Kawakami provide features related to use of multi-homing devices in the network. Therefore one of ordinary skill in the art would have been motivated to combine the teachings since both are within the same environment.

6. Therefore, it would be obvious to a person skilled in the art at the time of the invention was made to make use of multi-homed devices, taught by Kawakami, in the system of Myers for the purpose of efficient management of routing between the nodes of the network

7. But Myers-Kawakami does not explicitly disclose the use of availability metrics.

8. Nonetheless, Anerousis discloses the use of availability metrics (Anerousis, [0019], Anerousis discloses on the use of availability metrics which indicate which host/node is most appropriate to handle request from other nodes, thus indicating availability).

9. Both Myers-Kawakami, and Anerousis provide features related to routing optimization. Therefore one of ordinary skill in the art would have been motivated to combine the teachings since both are within the same environment.

10. Therefore, it would be obvious to a person skilled in the art at the time of the invention was made to make use of availability metrics, in the system of Myers-Kawakami for the purpose of efficient management of routing between the nodes of the network.

11. Consider **Claim 2**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the said connection is accomplished through Multi-

Art Unit: 2443

protocol Label Switching (MPLS) switched paths (Anerousis [0075], Anerousis et al clearly shows on the use of the method of incorporating the use of MPLS paths for implementing in IP tunnels). And wherein the multi-homed network connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) sends packets labeled with one of a first label corresponding to a first switched path and second label corresponding to a second switched path (Anerousis, [0092], [0097], Anerousis discloses the use of MPLS, and it is common in the art that MPLS involves label switching with link state protocol data units, and if switched to first path, the labels will be labeled for it, and if it is switched for second path, the labels will be labeled for it).

12. Consider **Claim 3**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the said connection is accomplished through Virtual Local Area Network (VLAN) tunnels (Anerousis [0096], Anerousis clearly shows on the use of the method incorporating the use of VLAN for implementing in IP tunnels); and wherein the multi-homed network-connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) sends packets with VLAN identifiers specifying a specific IP link on which packets should be forwarded (Anerousis, [0098]-[0099], Anerousis discloses on how packets are forwarded to their specific destinations).

13. Consider **Claim 4**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the said connection is accomplished using Internet protocol (IP)-level tunnels (Anerousis [0045], Anerousis clearly shows on the use of the method of incorporating IP tunnels on the network); and wherein the IP level tunnels (Anerousis [0045]) are assigned to different virtual interfaces on the multi-homed network-connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network), each virtual interface corresponding to a different ISP link (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network).

14. Consider **Claim 5**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the relevant performance and availability metric comprise network delay (Anerosis [0064], [0106], [0123], Anerousis clearly shows on the use of the method involving the metric - network delay, as it shows how it affects or improves the communication on the network).

15. Consider **Claim 6**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the relevant performance and availability metric comprise network loss (Anerosis [0064], [0106], [0123], Anerousis clearly shows on the use of the

Art Unit: 2443

method involving the metric – network loss, as it shows how it affects or improves the communication on the network).

16. Consider **Claim 7**, and as applied to claim 1 above Myers-Kawakami-Anerousis discloses the method wherein the relevant performance and availability metric comprise network throughput (Anerosis [0064], [0106], [0123], Anerousis clearly shows on the use of the method involving the metric – network throughput, as it shows how it affects or improves the communication on the network).

17. Consider **Claim 8**, and as applied to claim 1 above, Myers-Kawakami-Anerousis discloses the method wherein the relevant performance and availability metric comprise application-layer response time (Anerosis [0064], [0106], [0123], Anerousis clearly shows on the use of the method involving the metric – response time, as it shows how it affects or improves the communication on the network).

18. Consider **Claim 9**, and as applied to claim 1 above Myers-Kawakami-Anerousis discloses wherein the step of measuring relevant performance and availability metrics comprises making passive measurements (Myers, [0064], Myers indicates that passive measurements are carried out as the metrics are saved, and calculations are performed afterwards indicating optimum route), wherein the general purpose computer utilizes applications running on the general purpose computer to measure the relevant performance metrics in an application-specific manner (Myers, [0062], Myers discloses

Art Unit: 2443

that a general purpose computer/node is used for network route control as it also contains routing optimizing software).

19. Consider **Claim 19**, Myers discloses a program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform method steps comprising (Myers, [0018]-[0019]): establishing and arrangement for linking said computer to least a first and second internet service providers (ISP) (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network); and to direct the packet to an outgoing link to one of the first ISP and the second ISP (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network), measuring relevant performance metrics (Myers, [0098], Myers discloses on how performance and metrics are measured by the nodes).

20. But Myer does not explicitly disclose the use of multi-homed network connected general purpose computer and utilizing the multi-homed network-connected general purpose computer for performing network route control function, said control functions comprising making a routing control decision at said computer prior to sending packet comprising network traffic and wherein the multi-homed network-connected general purpose computer is configured to perform the control functions without external network appliances and without a dedicated route control device

21. Nonetheless, Kawakami discloses a connection between a multi-homed network connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network). And utilizing the multi-homed network-connected

Art Unit: 2443

general purpose computer for performing network route control function, said control functions comprising making a routing control decision at said computer prior to sending packet comprising network traffic (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) and wherein the multi-homed network-connected general purpose computer is configured to perform the control functions without external network appliances and without a dedicated route control device (Kawakami, Fig 1, Fig 2, Kawakami discloses in [0055]-[0057], that the edge nodes can perform routing).

22. Both Myers and Kawakami provide features related to use of multi-homing devices in the network. Therefore one of ordinary skill in the art would have been motivated to combine the teachings since both are within the same environment.

23. Therefore, it would be obvious to a person skilled in the art at the time of the invention was made to make use of multi-homed devices, taught by Kawakami, in the system of Myers for the purpose of efficient management of routing between the nodes of the network

24. But Myers-Kawakami does not explicitly disclose the use of availability metrics.

25. Nonetheless, Anerousis discloses the use of availability metrics (Anerousis, [0019], Anerousis discloses on the use of availability metrics which indicate which host/node is most appropriate to handle request from other nodes, thus indicating availability).

Art Unit: 2443

26. Both Myers-Kawakami, and Anerousis provide features related to routing optimization. Therefore one of ordinary skill in the art would have been motivated to combine the teachings since both are within the same environment.

27. Therefore, it would be obvious to a person skilled in the art at the time of the invention was made to make use of availability metrics, in the system of Myers-Kawakami for the purpose of efficient management of routing between the nodes of the network

28. **Claim 21**, has similar limitations as Claim 19, therefore it is rejected under the same rational as Claim 19.

29. Consider **Claim 22**, Myers-Kawakami-Anerousis discloses the multi-homed network general purpose computer according to Claim 21, wherein the multi-homed network connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) is configured to send packets labeled with one of a first and a second label corresponding to one of a first and a second Multi-protocol Label Switching (MPLS)

switched paths (Anerousis, [0092], [0097], Anerousis discloses the use of MPLS, and it is common in the art that MPLS involves label switching with link state protocol data units, and if switched to first path, the labels will be labeled for it, and if it is switched for second path, the labels will be labeled for it) in an application specific manner based on

the relevant performance and

availability metrics metrics (Anerousis, [0019], Anerousis discloses on the use of availability metrics which indicate which host/node is most appropriate to handle request from other nodes, thus indicating availability).

30. Consider **Claim 23**, Myers-Kawakami-Anerousis discloses the multi-homed network-connected general purpose computer (Kawakami, [0055]-[0057], Kawakami discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) according to Claim 21, wherein the multi-homed network-connected general purpose computer is configured to send packets with Virtual Local Area Network (VLAN) (Anerousis [0096], Anerousis clearly shows on the use of the method incorporating the use of VLAN for implementing in IP tunnels) identifiers specifying a specific IP link on which packets should be forwarded in an application specific manner (Anerousis, [0098]-[0099], Anerousis discloses on how packets are forwarded to their specific destinations) based on the relevant performance and availability metrics (Anerousis, [0019], Anerousis discloses on the use of availability metrics which indicate which host/node is most appropriate to handle request from other nodes, thus indicating availability).

31. Consider **Claim 24**, Myers-Kawakami-Anerousis discloses the multi-homed network-connected general purpose computer (Kawakami, [0055]-[0057], Kawakami

Art Unit: 2443

discloses on how the edge nodes can perform routing and are multi-homed between customer network and provider network) according to Claim 21, wherein the multi-homed network-connected general purpose computer is configured with internet protocol (IP)-level tunnels (Anerousis [0045]) assigned to different virtual interfaces on the multi-homed network-connected general purpose computer, each virtual interface corresponding to a different ISP link (Myers, [0050], Myers disclosed on how the nodes can be connected different multiple providers of the network).

32. **Claim 25**, has similar limitation as Claim 5, therefore it is rejected under the same rational as Claim 5.

33. **Claim 26**, has similar limitation as Claim 6, therefore it is rejected under the same rational as Claim 6.

34. **Claim 27**, has similar limitation as Claim 7, therefore it is rejected under the same rational as Claim 7.

35. **Claim 28**, has similar limitation as Claim 8, therefore it is rejected under the same rational as Claim 8.

36. **Claim 29**, has similar limitation as Claim 9, therefore it is rejected under the same rational as Claim 9.

Response to Arguments

Applicant's arguments with respect to claim 1-9, 19, 21-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH SIKRI whose telephone number is 571-270-1783. The examiner can normally be reached on 8am - 5pm Monday - Friday.

Art Unit: 2443

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia Dollinger can be reached on 571-272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anish Sikri
a.s.

11/3/09

/Tonia LM Dollinger/
Supervisory Patent Examiner, Art Unit 2443